

Work Order ID 64961

Wednesday, January 05, 2011 9:14:24 AM



Page 1

Item ID: D407-667-105TRN

Accept



Setup Start



Revision ID:

Item Name: Crosstube Turning Detail

Stop



Start Date: 1/5/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 1/14/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

[Signature]

Date: 11-01-5

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr								
D407-667-145	Rev C								

100	MORI SEIKI CNC LATHE LARGE	0.00							
Mori Seiki	Memo	0.00							
Mori Seiki CNC Lathe Large	1-Fill tube with sand & install plugs DT8673 on both ends as per Folio FA249□2-Turn first side as per Folio FA249□3- File transition lines smooth.								

amb 11/01/19

110	QC1- Inspect dimensions to dimension sheet	0.00							
QC	Memo	0.00							
Quality Control									

amb 11/01/20

120	MORI SEIKI CNC LATHE LARGE	0.00							
Mori Seiki	Memo	0.00							
Mori Seiki CNC Lathe Large	1-Turn second side as per Folio FA249□2- File transition lines smooth.□3- Remove sand and plugs□4-Scribe part # and batch # using vibrating stylus as per Dwg D206-667-145 □Inside of Cuff(Do not engrave on outside of tube)								

amb 11/01/20

W/O:		WORK ORDER CHANGES					
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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC1- Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

Quality Control

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

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Reference:

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Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

DP 11-1-25

170

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and stock in Kanban rack Location: 46

DP 11-1-25

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11/01/26 MF 11-01-25

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Picklist Print

Wednesday, January 05, 2011 9:14:34 AM

Page 1

Work Order ID: 64961



Parent Item: D407-667-105TRN



Parent Item Name: Crosstube Turning Detail



Start Date: 1/5/2011

Required Date: 1/14/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:a 08.02.28 new issue EC
IPP Rev B 08.04.02 Removed polish EC verified by: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6010-115 		Manufactured	No			110	Each	41.0000	1	1			
Crosstube Material													

Location

Loc Qty

Loc Code

LG

41

26424

2

→ 38343

39

1 m 1/10/11

W/O:		WORK ORDER CHANGES					
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DART AEROSPACE LTD	Work Order:	<i>04901</i>
Description: Crosstube Assembly	Part Number:	D407-667-145
Inspection Dwg: D407-667-145 Rev: C		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	<i>2.245</i>	<i>✓</i>		<i>Vern 9/12v</i>	<i>ML-03</i>
	1.865	+0.005/-0.000	<i>1.870</i>	<i>✓</i>			<i>ML-02</i>
	1.878	+0.005/-0.000	<i>1.882</i>	<i>✓</i>			<i>"</i>
	1.970	+0.005/-0.000	<i>1.975</i>	<i>✓</i>			<i>"</i>
	2.030	+0.005/-0.000	<i>2.035</i>	<i>✓</i>			<i>ML-03</i>
	2.165	+0.005/-0.000	<i>2.170</i>	<i>✓</i>			<i>"</i>
	0.125	+/-0.010	<i>.135</i>	<i>✓</i>		<i>Vern</i>	<i>ML-7</i>
	R0.063	+/-0.010	<i>R.063</i>	<i>✓</i>		<i>Rad-gage</i>	<i>Ref</i>
	R0.500	+/-0.010	<i>R.500</i>	<i>✓</i>		<i>"</i>	<i>"</i>
SIDE B	R0.063	+/-0.010	<i>R.063</i>	<i>✓</i>		<i>"</i>	<i>"</i>
	4.438	+/-0.010	<i>4.438</i>	<i>✓</i>		<i>Vern</i>	<i>ML-7</i>
	2.240	+0.005/-0.000	<i>2.245</i>	<i>✓</i>		<i>Mill</i>	<i>ML-03</i>
	1.865	+0.005/-0.000	<i>1.870</i>	<i>✓</i>			<i>ML-02</i>
	1.878	+0.005/-0.000	<i>1.883</i>	<i>✓</i>			<i>"</i>
	1.970	+0.005/-0.000	<i>1.975</i>	<i>✓</i>			<i>"</i>
	2.030	+0.005/-0.000	<i>2.035</i>	<i>✓</i>			<i>ML-03</i>
	2.165	+0.005/-0.000	<i>2.170</i>	<i>✓</i>			<i>"</i>
	0.125	+/-0.010	<i>.135</i>	<i>✓</i>		<i>Vern</i>	<i>ML-7</i>
	R0.063	+/-0.010	<i>R.063</i>	<i>✓</i>		<i>Rad-gage</i>	<i>REF</i>
	R0.500	+/-0.010	<i>R.500</i>	<i>✓</i>		<i>"</i>	<i>"</i>
	R0.063	+/-0.010	<i>R.063</i>	<i>✓</i>		<i>"</i>	<i>"</i>
	4.438	+/-0.010	<i>4.438</i>	<i>✓</i>			
	113.20	+/-0.020	<i>113.220</i>	<i>✓</i>		<i>M-tape</i>	<i>ML-2</i>

Measured by:	<i>and</i>	Audited by:	<i>id</i>	Prototype Approval:	N/A
Date:	<i>11/01/20</i>	Date:	<i>11.1.21</i>	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.04.21	New Issue (P/O D407-667-105)	KJ/RF	
B	06.03.09	Dwg Rev updated	KJ/JLM	
C	09.06.11	Dwg Rev updated	KJ <i>JS</i>	<i>M</i>

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Item	Qty -145	Part Number	Description
1	X	D407-667-145	CROSSTUBE ASSEMBLY (407 HIGH FWD)
2	1	D6010-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6010-115
FINISHED LENGTH = 113.20±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-145" AND BATCH NUMBER ON
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 17.8 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER
QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE
THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS
ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 44961
PL 11-01-5

RELEASED
08/11/02

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. 7 ADD TOLERANCES (ZN C6-3, C4-3, D2-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	02.05.06
REV.	DESCRIPTION	BY	DATE
DESIGN	7	DART AEROSPACE LTD	
DRAWN	RE	HAWKESBURY, ONTARIO, CANADA	
CHECKED	7	DRAWING NO.	REV. C
MFG. APPR.	7	D407-667-145	SHEET 1 OF 4
APPROVED	7	TITLE	SCALE
DE APPR.	7	CROSSTUBE ASS'Y (407 HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

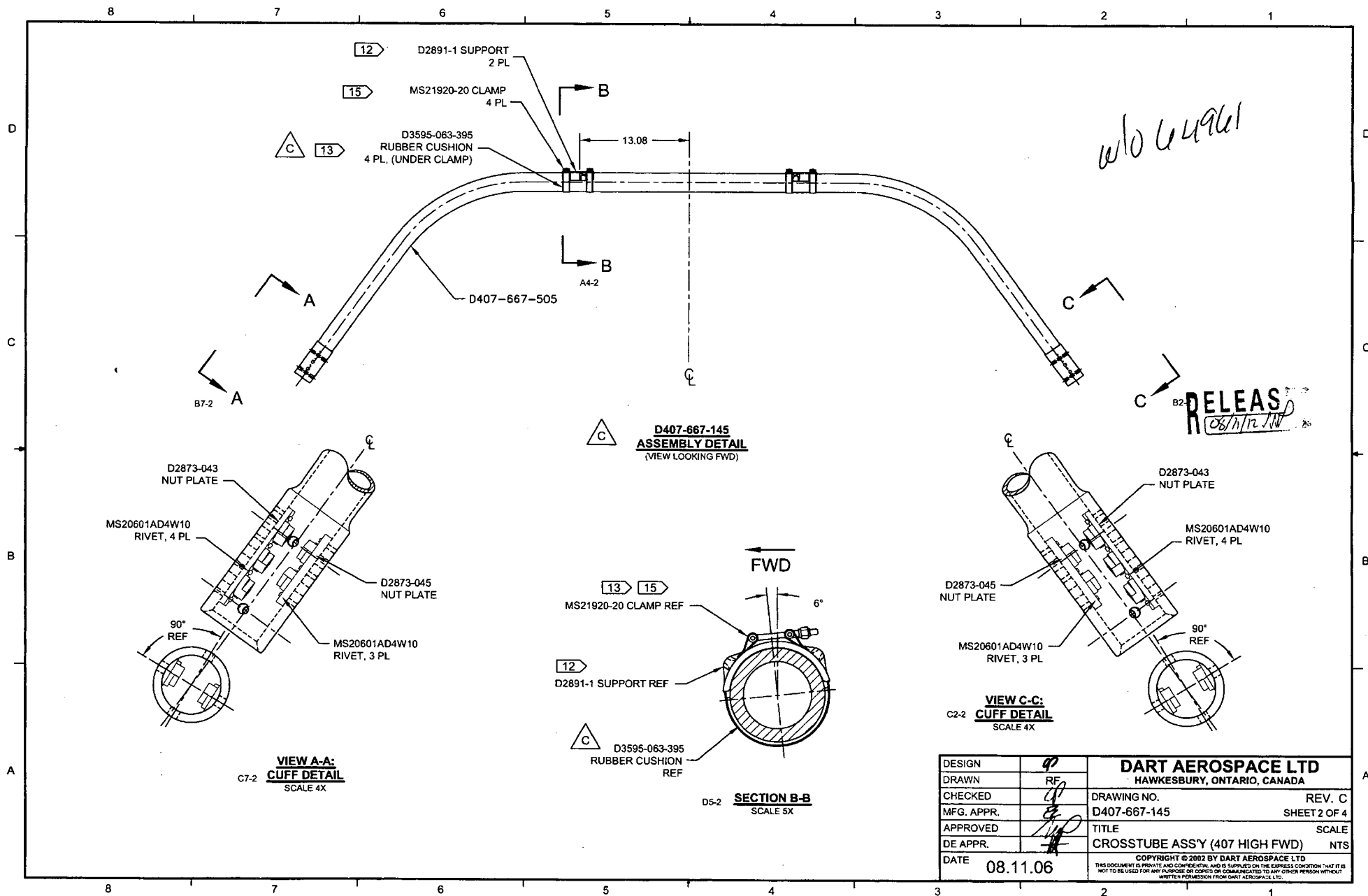
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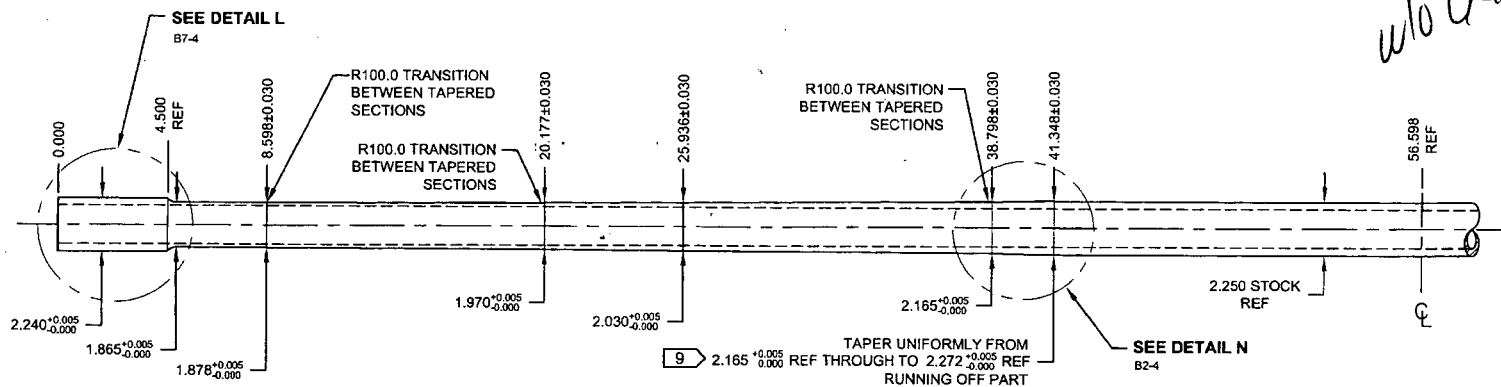
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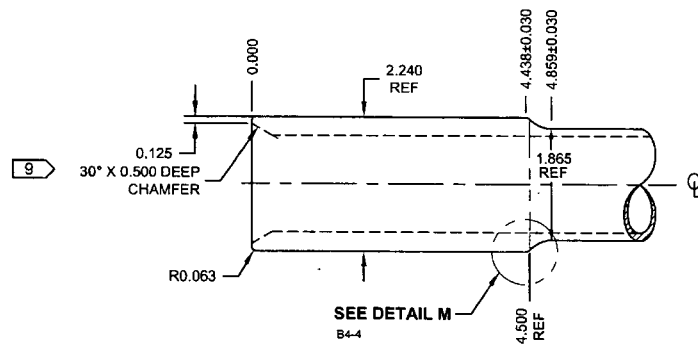
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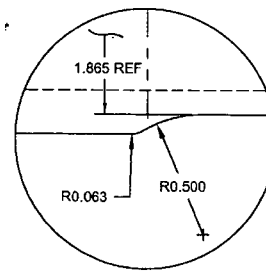
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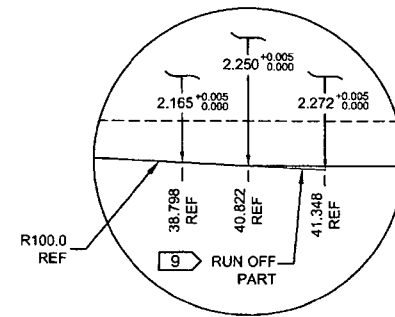
TURNING DETAIL



**DETAIL L:
CROSSTUBE CUFF**
NOT TO SCALE



**DETAIL M:
CUFF TRANSITION**
NOT TO SCALE



**DETAIL N:
TAPER RUN-OFF**
NOT TO SCALE

RELEASED

DESIGN	Q	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	EF	DRAWING NO.	REV. C
MFG. APPR.	EF	D407-667-145	SHEET 4 OF 4
APPROVED	EF	TITLE	SCALE
DE APPR.	EF	CROSSTUBE ASS'Y (407 HIGH FWD)	NTS
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